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     (FILE 'HOME' ENTERED AT 10:06:20 ON 19 SEP 2002)

     FILE 'CAPLUS' ENTERED AT 10:06:31 ON 19 SEP 2002
L1          4092 S SUPERPARAMAGNETIC OR SUPER-PARAMAGNETIC OR SUPERMAGNETIC OR S
L2         20473 S MAGNETIC (A) RECORDING
L3            75 S L1 AND L2
L4         10547 S UNDERLAYER OR (SOFT (A) MAGNETIC)
L5             4 S L3 AND L4
L6          1284 S SEEDLAYER OR SEED-LAYER OR (SEED (A) LAYER)
L7             0 S L3 AND L6
L8          4092 S SUPERPARAMAGNETIC OR SUPER-PARAMAGNETIC OR SUPERMAGNETIC OR S
L9         20473 S MAGNETIC (A) RECORDING
L10        10547 S UNDERLAYER OR (SOFT (A) MAGNETIC)
L11         1284 S SEEDLAYER OR SEED-LAYER OR (SEED (A) LAYER)
L12            4 S L8 AND L9 AND (L10 OR L11)

     FILE 'METADEX' ENTERED AT 10:11:56 ON 19 SEP 2002
L13          666 S SUPERPARAMAGNETIC OR SUPER-PARAMAGNETIC OR SUPERMAGNETIC OR S
L14          568 S MAGNETIC (A) RECORDING
L15         2141 S UNDERLAYER OR (SOFT (A) MAGNETIC)
L16          109 S SEEDLAYER OR SEED-LAYER OR (SEED (A) LAYER)
L17            0 S L13 AND L14 AND (L15 OR L16)
L18            1 S L13 AND L14

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L5 ANSWER 1 OF 4 CAPLUS COPYRIGHT 2002 ACS
AN 2002:591017 CAPLUS
TI Review Modern magnetic materials in data storage
AU Comstock, R. L.
CS Department of Chemical and Materials Engineering, San Jose State University, One Washington Square, San Jose, CA, 95192, USA
SO Journal of Materials Science: Materials in Electronics (2002), 13(9), 509-523
CODEN: JSMEEV; ISSN: 0957-4522
PB Kluwer Academic Publishers
DT Journal
LA English
CC 76 (Electric Phenomena)
AB The current status of the technol. of **magnetic recording** as used in disk drives is reviewed. The emphasis is on the magnetic materials used in the application and on some of the tech. problems that may limit the increase in areal d. The new technol. of magnetic random access memory (MRAM), which has evolved from the **magnetic recording** application, is also reviewed. A wide range of magnetic materials is essential for the advance of **magnetic recording** and the MRAM technol. For the **magnetic-recording** application the requirements are for high-magnetization, **soft magnetic** materials for write heads, new antiferromagnetic alloys with high blocking temps., large coupling to ferromagnetic films and low susceptibility to corrosion for pinning films in giant magnetoresistive sensors, and for the MRAM application, the requirement is for new ferromagnetic alloys with large values of tunneling polarization ratio. A significant limitation to **magnetic recording** is found to be the inconsistent demands on media thickness: small media thicknesses are required for large values of signal-to-noise ratio, while large values of thickness are required to reduce the impact of the **superparamagnetic** effect, which results in the potential for data loss over time. Both of these requirements are discussed. Multilayer ferromagnetic films for recording surfaces are shown to allow both large signal-to-noise ratio and adequate resistance to data loss.

L5 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2002 ACS
AN 2002:153089 CAPLUS
DN 136:193132
TI Perpendicular **magnetic recording** medium and perpendicular **magnetic recording**/reproduction apparatus
IN Ogiwara, Hideo; Hikosaka, Kazushi; Oikawa, Soichi; Sakai, Hiroshi; Shimizu, Kenji
PA Toshiba Corp., Japan; Showa Denko K. K.
SO Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM G11B005-738
ICS G11B005-65; G11B005-667; H01F010-08
CC 77-8 (Magnetic Phenomena)
FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 2002063714	A2	20020228	JP 2000-249727	20000821
	US 2002039669	A1	20020404	US 2001-902688	20010712
PRAI	JP 2000-249727	A	20000821		

Applicants

AB A high-d. and low-noise **magnetic recording** medium comprises a non-magnetic substrate having an **underlayer** film of a **superparamagnetic** film, and a perpendicular magnetic layer on the **underlayer** film. A perpendicular **magnetic**

recording/reprodn. app. having the above medium is also described.
ST **magnetic recording** medium **superparamagnetic** **underlayer** film
IT Magnetic films
(**superparamagnetic** films; **superparamagnetic** **underlayer** of perpendicular **magnetic** **recording** medium and perpendicular **magnetic** **recording**/reprodn. app.)
IT Magnetic memory devices
(**superparamagnetic** **underlayer** of perpendicular **magnetic** **recording** medium and perpendicular **magnetic** **recording**/reprodn. app.)
IT 74750-97-3D, oxidized 149344-82-1
RL: DEV (Device component use); USES (Uses)
(**superparamagnetic** **underlayer** of perpendicular **magnetic** **recording** medium and perpendicular **magnetic** **recording**/reprodn. app.)

L5 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2002 ACS
AN 2001:736459 CAPLUS
DN 136:62646
TI Perpendicular recording: the promise and the problems
AU Wood, R.; Sonobe, Y.; Jin, Z.; Wilson, B.
CS IBM Storage Technology Division, CUY/0282, San Jose, CA, 95193, USA
SO Journal of Magnetism and Magnetic Materials (2001), 235(1-3), 1-9
CODEN: JMMMDC; ISSN: 0304-8853
PB Elsevier Science B.V.
DT Journal; General Review
LA English
CC 77-0 (Magnetic Phenomena)
AB A review. Perpendicular recording has long been advocated as a means of achieving the highest areal densities. In particular, in the context of the '**superparamagnetic** limit', perpendicular recording with a soft **underlayer** promises several key advantages. These advantages include a higher coercivity, thicker media that should permit smaller diam. grains and higher signal-to-noise ratio. Also, the sharper edge-writing will facilitate recording at very high track densities (lower bit aspect ratio). Recent demonstrations of the technol. showed densities comparable with the highest densities reported for longitudinal recording. This paper further examines the promise that perpendicular recording will deliver an increase in areal d. two to eight times higher than that achievable with longitudinal recording. There are a no. of outstanding issues but the key challenge is to create a low-noise medium with a coercivity that is high and is much larger than the remanent magnetization.
ST review perpendicular **magnetic recording**
IT **Magnetic recording**
(perpendicular **magnetic recording**)
RE.CNT 15 THERE ARE 15 CITED REFERENCES AVAILABLE FOR THIS RECORD
RE
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(3) Fullerton, E; Paper #25pA-01 2000
(4) Greaves, S; Paper #26pA-10 2000
(5) Jin, Z; IEEE Trans Magn to be submitted 2001
(6) Jin, Z; National Storage Industry Consortium Winter Meeting 2000
(7) Okamoto, Y; Paper #26aA-05 2000
(8) Ouchi, K; IEEE Trans Magn 2000, V36, P16 CAPLUS
(9) Potter, R; IEEE Trans Magn 1974, VMAG-10(3), P502
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(11) Sonobe, Y; Paper #26pA-11 2000
(12) Takano, H; IEEE Inter-mag Conference 2000
(13) Victora, R; National Storage Industry Consortium Winter Meeting 2000

(14) Wood, R; IEEE Trans Magn 2000, VMAG-36(1), P36
(15) Wood, R; JMMM 1999, V193, P207 CAPLUS

L18 ANSWER 1 OF 1 METADEX COPYRIGHT 2002 CSA
AN 2001(10):33-958 METADEX
TI Ambient gas effects on iron oxide particle aggregated films prepared by laser ablation.
AU Zbroniec, L. (National Institute for Materials and Chemical Research); Sasaki, T. (National Institute for Materials and Chemical Research); Koshizaki, N. (National Institute for Materials and Chemical Research)
SO Scripta Materialia (2001) 44, (8-9), 1869-1872, Graphs, 6 ref.
. USA
Conference: 5th International Conference on Nanostructured Materials (NANO 2000)., Sendai, Japan, August 20-25, 2000
ISSN: 1359-6462
DT Conference
CY United States
LA English